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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,302	02/24/2004	Seiichi Yamamoto	103213-00071	2270

7590 06/14/2005

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EXAMINER
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NGUYEN, HIEP

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/784,302	<b>Applicant(s)</b> YAMAMOTO ET AL.	
	<b>Examiner</b> Hiep Nguyen	<b>Art Unit</b> 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 6 is/are rejected.
- 7) ☒ Claim(s) 4 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02-24-04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102 (e) as being anticipated by Fotouhi (USP. 6,624,671).

Regarding claim, figure 4A of Fotouchi shows a semiconductor integrated circuit device comprising:

a power transistor (M19) that feeds a current to a load;

a first transistor (M30) of which a second electrode and a control electrode are connected respectively to a second electrode and a control electrode of the power transistor (M19);

a second transistor (M31) of which one of a first electrode or a second electrode is connected to a first electrode of the first transistor (M30) ; and

an operational amplifier of which one input terminal is connected to a first electrode of the power transistor (M19), of which another input terminal is connected to the first electrode of the first transistor (M30), and of which an output terminal is connected to a control electrode of the second transistor (M31), wherein the second transistor outputs, at another of the first and second electrode electrodes thereof, a current signal proportional to a current flowing through the power transistor (M19). Note that transistor (M19) is a power transistor that generates a current ( $I_{out}$ ) much larger (100 times) than the sense current ( $I_{sen}$ ) (col. 7 lines 1-12).

Regarding claim 2, the second transistor (M31) and the operational amplifier constitute a negative feedback circuit.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fotouhi (SSP. 6,624,671) in view of Takeuchi (USP. 6,236,270).

Regarding claim 3, figure 4A of Fotouhi includes all the limitations of claim 3, except for the limitation that there is a transistor coupled to the power transistor (30) and to the second transistor (M31). Figure 1 of Takeuchi shows an op-amp comprising only two PMOS transistors. Therefore, it would have been obvious to an artisan having skills in the art to replace the op-amp (A) of the present application with the op-amp taught by Takeuchi for providing a simple op-amp comprising only two transistors, thus, the fabrication cost is reduced. By the replacement, the third transistor (10) has a gate connected to the control electrode is connected to a first electrode of the power transistor (M19) and of which a second electrode is connected to a control electrode of the second transistor (M31), wherein the second transistor outputs, at a first electrode thereof, a current signal proportional to a current flowing through the power transistor (col. 7 lines 1-12).

Regarding claims 5 and 6, the second (NMOS, M31) and third transistors (PMOS, 10) are transistors of opposite polarities and the second and third transistors are considered to be identical and to have the same gate-source voltages. The second transistor (M31) and the first transistor (M30) are all NMOS transistors.

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***Allowable Subject Matter***

Claims 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4 and 7 are objected to because the prior art of record (6,624,671) fails to teach or suggest a semiconductor circuit having a resistor coupled the third transistor and a DC voltage as called for in claims 4 and 7.

***Conclusion***

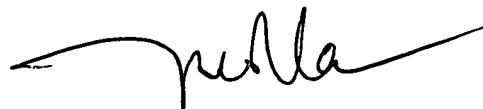
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hiep Nguyen whose telephone number is (571) 272-1752. The examiner can normally be reached on Monday to Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hiep Nguyen

06-10-05



**TUANT.LAM  
PRIMARY EXAMINER**